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Monday, April 6, 1936

HOUSEKEEPERS' CHAT

(FOR BROADCAST USE ONLY)

Subject: "ORANGE JUICE IN CANS." Information from the Bureau of Chemistry and Soils, United States Department of Agriculture.

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The news I have to report to you today is a canning discovery. I want to tell you how chemists from the Department of Agriculture solved a problem that has been troubling canners for many years -- the problem of how to can orange juice successfully.

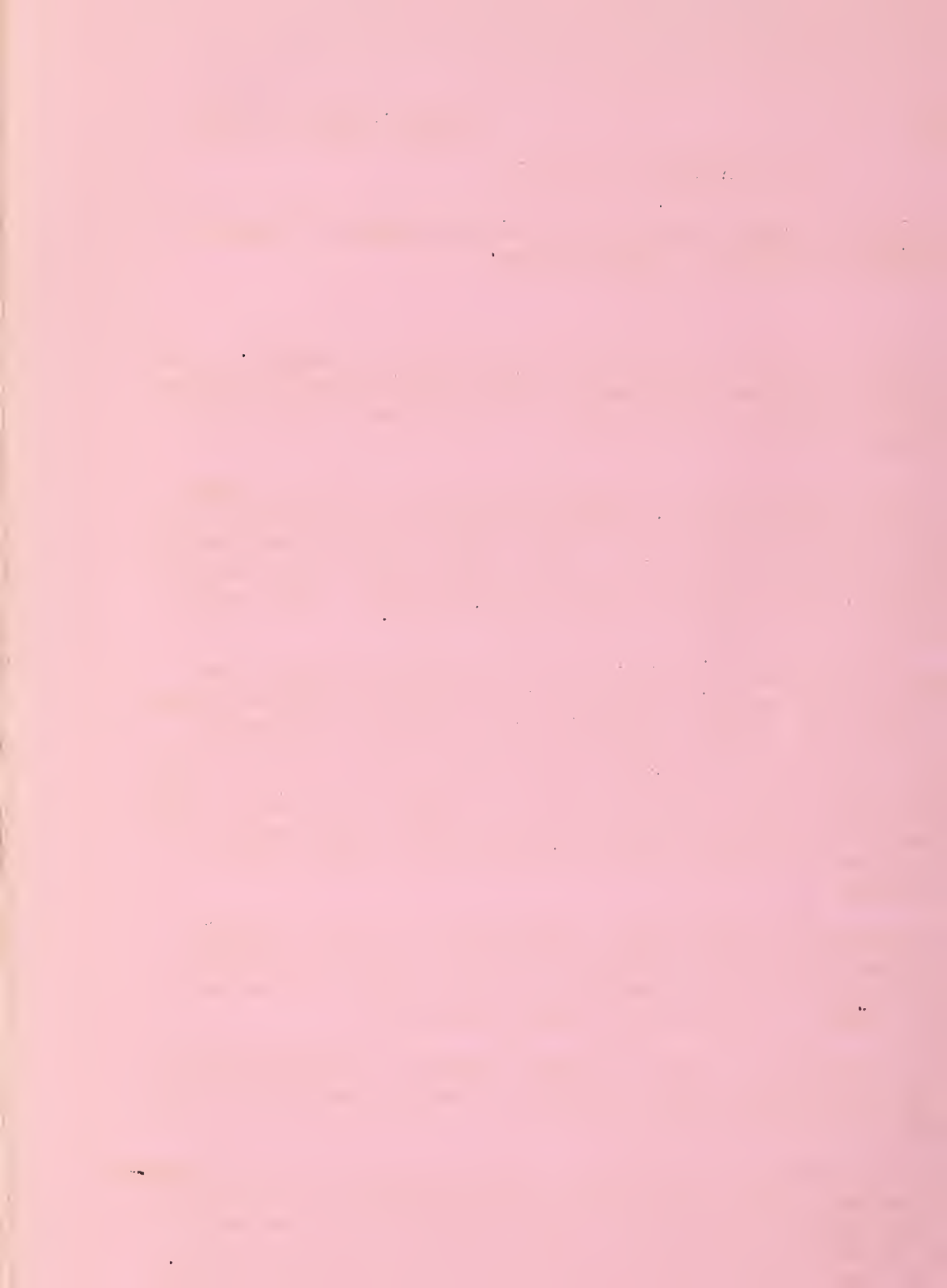
I suppose that orange juice -- fresh orange juice, that is -- ranks as America's most popular fruit juice. Certainly many American families consider it a breakfast necessity and drink it every morning year in and year out. Well, fresh orange juice has been one thing, but canned orange juice has been quite another. Canned orange juice has been far from popular. Most people have objected to what they described as its "cooked" taste.

Oddly enough, grapefruit juice has been satisfactorily canned for about 15 years. Commercial canners have been pasteurizing this juice -- that is, sterilizing it by a few minutes' heating below the boiling temperature, and its flavor has come through the process very successfully. But not orange juice. Try as they would, the early canners of orange juice always ran into "taste trouble" when they tried to put the juice of oranges into cans. Orange juice not only changed its flavor -- acquired that cooked taste when it was heated, but it also lost its characteristic tang that most people enjoy so much in the fresh juice.

When the Department of Agriculture established its Citrus Products Station at Winter Haven, Florida, 4 years ago, the first job its chemists tackled was finding a way of canning orange juice which would keep enough of its fresh flavor to make it a satisfactory commercial product.

By careful investigation these Government chemists discovered the 2 chief causes of the unfortunate change in flavor in canning orange juice, and they worked out ways to prevent this trouble.

First of all, they found that orange juice can stand only the shortest period of heating -- that just a few minutes of pasteurizing is too much for the flavor. So they worked out the idea of flash pasteurization and equipment for this process. Flash pasteurization is simply flashing the temperature of the juice to a high degree for a few seconds instead of holding the juice at a lower temperature for a longer period.



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Then, they discovered that the air in the juice during heating caused oxidation and that this oxidation changed the flavor of the juice and also destroyed its valuable vitamin C. To prevent this, they worked out a method of removing the air from the juice before canning it -- in other words, de-aerating the juice. This preserved both the flavor and the vitamin C content.

Florida and California canners are now using these 2 discoveries in putting up orange juice. And the public apparently approves of these new and better canning methods, because more than a half million boxes of oranges went into juice last season compared with less than 50 thousand 5 years ago.

The chemists who made these canning discoveries say that grapefruit juice put up by de-aeration and flash pasteurization will have a better flavor and better keeping qualities than that put up by the old pasteurization methods.

As for the housewife who uses canned orange juice, here are two tips from the chemists for her. They say that canned orange juice has better flavor if you pour it back and forth from one container to another maybe 6 or 8 times before serving. This is to restore the air to the juice -- the air that was removed by the de-aerating canning process. This rapid pouring back and forth a few times before serving improves the flavor of both canned orange juice and canned grapefruit juice.

Second tip from the chemists to the housewife: Don't let the can of orange juice stand around open in the kitchen for any length of time. Open it just before serving. Standing open won't give the juice any harmful properties. It will be perfectly safe to drink. But it allows for oxidation and thus change in flavor.

Of course, you know that the flavor of fresh orange juice deteriorates rapidly when exposed to air -- particularly warm air. Also fresh orange juice loses some of its vitamin A content on standing exposed to air. The chemists report that the best way to keep the full value of flavor and vitamins is to keep the oranges cold and cut or squeeze them the last minute before serving. If you must prepare them in advance, chill the oranges in the refrigerator before extracting the juice; then cover and return the juice to the refrigerator immediately, keeping it as cold as possible until served.

By the way, the chemists at this citrus fruit laboratory have also been working on other citrus by-products -- other ways to make the most of our citrus crops and prevent losses to the grower in bumper years. They have made salad oil from grape-fruit seeds. And this oil has been hydrogenated for cooking use. But at present grapefruit-seed oil can't compete profitably with cottonseed and other vegetable oils.

The chemists have also studied the making of wines, brandies and cordials from citrus juices.

Well, that's all the news I have today about the work Government chemists are doing with citrus fruits.

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